

# Claims

- [c1] 1. A system for facilitating living in a predetermined location for an individual, said system comprising:  
an integrated portfolio of at least one of active and passive sensors for monitoring activities of the individual;  
an analyzing system for synthesizing and analyzing signals from said sensors for thereby assessing a status of the individual and inferring the individual's at least one of state, status and quality of life;  
a decision making system for generating an output based upon said assessment; and  
an activation system for one of validation and activating processes to respond to said output from said decision making system.
- [c2] 2. The system according to claim 1, wherein said sensors are capable of sensing at least one of contact, sound, vibration, temperature, humidity, video, motion, access, location, telecommunications, computer traffic, HVAC, power, flow of utility services, appliance status, thermography, biometric monitoring and man/machine interfaces.
- [c3] 3. The system according to claim 1, wherein said sensors

monitor usage of at least one of appliance, Hi-Fi, alarm, television, radio, computer, exercise equipment and medical equipment for assessment of at least one of health, activity and safety of the individual.

- [c4] 4. The system according to claim 1, wherein said analyzing system comprises at least one of algorithms, rules engines, decision making systems and workflow to convert raw data from said sensors into probabilistic assessment of at least one of health, activity and safety of the individual.
- [c5] 5. The system according to claim 1, wherein said analyzing system utilizes at least one of Artificial Intelligence, Case Based Reasoning, Evidential Reasoning, Data Mining, Rule Base Decisioning, Fuzzy Logic, Agent Based, System Dynamic, Discrete Event and Monte Carlo Simulation in its reasoning.
- [c6] 6. The system according to claim 1, wherein said analyzing system utilizes data from at least two of said sensors for assessing the status of the individual and inferring the individual's at least one of quality of life, status, condition, security and health state.
- [c7] 7. The system according to claim 6, wherein said assessment of status is used to probabilistically or determinis-

tically determine if an activity is normal or an anomaly, such that if said activity is normal as defined by a probability set-point, then said decision making and activation systems label said activity as normal, but if said activity is an anomaly, said decision making and activation systems perform at least one of contacting the individual and sending assistance to the individual.

[c8] 8. The system according to claim 1, wherein said system is integrated with at least one of a health and owner's insurance to at least one of reduce a cost of said insurance and enhance care at a given level of said insurance, the owner being one of a home owner, an institution and an insurance company with or without reinsurance.

[c9] 9. The system according to claim 8, wherein said insurance includes at least one of a reduction in premium and increase in coverage for extension of in-home living by means of said system.

[c10] 10. The system according to claim 1, wherein said system facilitates living in at least one of a home of the individual, a hospital, an assisted care facility and an institution.

[c11] 11. The system according to claim 1, wherein said analyzing system comprises at least one of a computer and

a call center, located at a remote location from said pre-determined location, for analyzing signals from said sensors.

- [c12] 12. The system according to claim 1, wherein said decision making system generates said output based upon said assessment of values, readings, trends, and pattern recognition from data related to at least one of power use, gas use, water use, video, motion, access, biometrics, HVAC, medicine dose, thermography, man/machine interfaces, computing platforms and call centers.
- [c13] 13. The system according to claim 1, wherein said sensors comprise at least one of automated voice, touch and home physical system input/output sensors.
- [c14] 14. The system according to claim 1, wherein said system further comprises means for generating at least one of a voice or electronically instantiated query, sound, optical, motion and a vibration signal to the individual upon the detection of an anomalous pattern of activity.
- [c15] 15. The system according to claim 14, wherein said means for generating is integrated in at least one of a medical device, a device with a processor, a TV, radio, telephone, user I/O device, appliance interlock and physical device interlock.

- [c16] 16. The system according to claim 1, wherein said processes being adjusted comprise at least one of remote and on site adjustment.
- [c17] 17. The system according to claim 1, further comprising a verification system for verifying said output by said decision making system for reducing the chance of a false decision.
- [c18] 18. The system according to claim 1, wherein said system utilizes at least one of a dynamically configured spatial/volumetric simulation space, activity density, sequence and rate, spatial rate variation and activity-resource reconciliation for assessment of at least one of health, activity and safety of the individual based upon at least one of spatial and temporal inferencing.
- [c19] 19. The system according to claim 1, wherein said system includes at least one of logical and reasoned rules for comparing a volumetric and temporal dynamic control volume for persons and activities of the individual.
- [c20] 20. The system according to claim 1, wherein said system includes a plurality of sensors for enabling reasoned inputs and validating reasoning results.
- [c21] 21. The system according to claim 1, wherein said deci-

sion making system utilizes at least one of RF and mobile tracking means for assessing the individual's quality of health.

[c22] 22. The system according to claim 1, wherein said system utilizes appliance and utility use or flows to reason on at least one of health, activity, safety and status of at least one of the individual and the individual's environment.

[c23] 23. The system according to claim 1, wherein said system utilizes Agent Based Modeling to reconcile at least one of time and space appropriateness in activity and status of at least one of the individual and the individual's environment.

[c24] 24. The system according to claim 1, wherein said system utilizes mutually exclusive time and space continuums to at least one of reason and infer at least one of health and quality of life of the individual.

[c25] 25. The system according to claim 1, wherein said system utilizes a plurality of sensors for obtaining time and space logical inputs and outputs for inferring at least one of health, status and quality of life of the individual.

[c26] 26. The system according to claim 1, wherein said system comprises at least one of automated and manual al-

gorithm learning with training motions and activities to instantiate logic and data baselines.

- [c27] 27. The system according to claim 1, wherein said system comprises continuous learning from at least one of activity, sensed signals, reasoning and feedback for increasing reasoning accuracy.
- [c28] 28. The system according to claim 1, wherein said system comprises product offerings that lower insurance and reinsurance cost for at least one of a given service and risk level.
- [c29] 29. The system according to claim 1, wherein said system comprises means for utilization of more global data in comparative algorithms to assess at least one of attributes and context, the comparative wellness and activity state of one who is monitored.
- [c30] 30. The system according to claim 1, wherein said system comprises means for location of items tagged by RF based upon an automated command to locate and display.
- [c31] 31. The system according to claim 1, wherein said system comprises means for checking activities against forecasted or scheduled activities in assessing at least one of fraud, compliance to contracted terms and condi-

tions, an anomaly and an adequacy of care.

[c32] 32. A decision making system for assessing signals from a plurality of sensors and generating a selective output from a plurality of potential outputs based upon said assessment, said sensors being at least one of active and passive sensors, said system comprising:  
an integrated portfolio of said sensors for monitoring activities of an individual in a predetermined location;  
an analyzing system for synthesizing and analyzing signals from said sensors for thereby assessing a status of the individual and inferring the individual's at least one of state, status and quality of life; and  
an activation system for one of validation and activating processes to respond to said selective output from said decision making system,  
wherein said decision making system facilitates living in the predetermined location for the individual.

[c33] 33. The decision making system according to claim 32, wherein said sensors are capable of sensing at least one of contact, sound, vibration, temperature, humidity, video, motion, access, location, telecommunications, computer traffic, HVAC, power, flow of utility services, appliance status, thermography, biometric monitoring and man/machine interfaces.



- [c34] 34. The decision making system according to claim 32, wherein said sensors monitor usage of at least one of a medical device, television, radio, computer, exercise equipment and medical equipment for assessment of at least one of health, activity and safety of the individual.
- [c35] 35. The decision making system according to claim 32, wherein said analyzing system comprises at least one of algorithms, rules engines and workflow to convert raw data from said sensors into probabilistic assessment of at least one of health, activity and safety of the individual.
- [c36] 36. The decision making system according to claim 32, wherein said analyzing system utilizes at least one of Artificial Intelligence, Case Based Reasoning, Evidential Reasoning, Data Mining, Rule Base Decisioning, Fuzzy Logic, Agent Based, System Dynamic, Discrete Event and Monte Carlo Simulation in its reasoning.
- [c37] 37. The decision making system according to claim 32, wherein said analyzing system utilizes data from at least two of said sensors for assessing the status of the individual and inferring the individual's at least one of quality of life, status, activity, condition, security and health state.

- [c38] 38. The decision making system according to claim 37, wherein said assessment of status is used to probabilistically or deterministically determine if an activity is normal or an anomaly, such that if said activity is normal as defined by a probability set-point, then said decision making and activation systems label said activity as normal, but if said activity is an anomaly, said decision making and activation systems perform at least one of contacting the individual and sending assistance to the individual.
- [c39] 39. The decision making system according to claim 32, wherein said decision making system is integrated with at least one of a health and owner's insurance to at least one of reduce a cost of said insurance and enhance care at a given level of said insurance, the owner being one of a home owner, an institution and an insurance company with or without reinsurance.
- [c40] 40. The decision making system according to claim 39, wherein said insurance includes at least one of a reduction in premium and increase in coverage for extension of in-home living by means of said system.
- [c41] 41. The decision making system according to claim 32, wherein said decision making system facilitates living in at least one of a home of the individual, a hospital, an

assisted care facility and an institution.

- [c42] 42. The decision making system according to claim 32, wherein said analyzing system comprises at least one of a computer and a call center, located at a remote location from said predetermined location, for analyzing signals from said sensors.
- [c43] 43. The decision making system according to claim 32, wherein said decision making system generates said output based upon said assessment of values, readings, trends, and pattern recognition from data related to at least one of power use, gas use, water use, video, motion, access, biometrics, HVAC, medicine dose, thermography, man/machine interfaces, computing platforms and call centers.
- [c44] 44. The decision making system according to claim 32, wherein said sensors comprise at least one of automated voice, touch and home physical system input/output sensors.
- [c45] 45. The decision making system according to claim 32, further comprising means for generating at least one of a voice or electronically instantiated query, sound, optical, motion and a vibration signal to the individual upon the detection of an anomalous pattern of activity.

- [c46] 46. The decision making system according to claim 45, wherein said means for generating is integrated in at least one of a medical device, a device with a processor, a TV, radio, telephone, user I/O device, appliance interlock and physical device interlock.
- [c47] 47. The decision making system according to claim 32, wherein said processes being adjusted comprise at least one of remote and on site adjustment.
- [c48] 48. The decision making system according to claim 32, further comprising a verification system for verifying said output by said decision making system for reducing the chance of a false decision.
- [c49] 49. The decision making system according to claim 32, wherein said decision making system utilizes at least one of a dynamically configured spatial/volumetric simulation space, activity density, sequence and rate, spatial rate variation and activity-resource reconciliation for assessment of at least one of health, activity and safety of the individual based upon at least one of spatial and temporal inferencing.
- [c50] 50. The decision making system according to claim 32, further comprising at least one of logical and reasoned rules for comparing a volumetric and temporal dynamic

control volume for persons and activities of the individual.

- [c51] 51. The decision making system according to claim 32, further comprising a plurality of sensors for enabling reasoned inputs and validating reasoning results.
- [c52] 52. The decision making system according to claim 32, wherein said decision making system utilizes at least one of RF and mobile tracking means for assessing the individual's activity, state or quality of health.
- [c53] 53. The decision making system according to claim 32, wherein said decision making system utilizes appliance and utility use or flows to reason on at least one of health, safety and status of at least one of the individual and the individual's environment.
- [c54] 54. The decision making system according to claim 32, wherein said decision making system utilizes Agent Based Modeling to reconcile at least one of time and space appropriateness in activity and status of at least one of the individual and the individual's environment.
- [c55] 55. The decision making system according to claim 32, wherein said decision making system utilizes mutually exclusive time and space continuums to at least reason and infer at least one of health and quality of life of the

individual.

- [c56] 56. The decision making system according to claim 32, wherein said decision making system utilizes a plurality of sensors for obtaining time and space logical inputs and outputs for inferring at least one of activity, health, status and quality of life of the individual.
- [c57] 57. The decision making system according to claim 32, wherein said decision making system comprises at least one of automated and manual algorithm learning with training motions and activities to instantiate logic and data baselines.
- [c58] 58. The decision making system according to claim 32, wherein said decision making system comprises continuous learning from at least one of activity, sensed signals, reasoning and feedback for increasing reasoning accuracy.
- [c59] 59. The decision making system according to claim 32, wherein said decision making system comprises product offerings that lower at least one of insurance and reinsurance cost for a given service or risk level.
- [c60] 60. The decision making system according to claim 32, wherein said decision making system comprises means for utilization of more global data in comparative algo-

rithms to assess at least one of attributes and context, the comparative wellness and activity state of one who is monitored.

- [c61] 61. The decision making system according to claim 32, wherein said decision making system comprises means for location of items tagged by RF based upon an automated command to locate and display.
- [c62] 62. The decision making system according to claim 32, wherein said decision making system comprises means for checking activities against forecasted or scheduled activities in assessing at least one of fraud, compliance to contracted terms and conditions, an anomaly and an adequacy of care.
- [c63] 63. A method for facilitating living in a predetermined location for an individual, said method comprising:  
monitoring activities of the individual by means of an integrated portfolio of at least one of active and passive sensors;  
synthesizing and analyzing signals from said sensors by means of an analyzing system for assessing a status of the individual and inferring the individual's activity, quality of life, status or condition;  
generating an output based upon said assessment by means of a decision making system; and

activating processes to respond to said decision making by means of an activation system.

- [c64] 64. The method according to claim 63, further comprising sensing at least one of contact, sound, vibration, temperature, humidity, video, motion, access, telecommunications, computer traffic, HVAC, power, flow of utility services, appliance status, thermography, biometric monitoring and man/machine interfaces by means of said sensors.
- [c65] 65. The method according to claim 63, further comprising monitoring usage of at least one of medical devices, television, radio, computer, exercise equipment and medical equipment for assessment of at least one of health, activity and safety of the individual.
- [c66] 66. The method according to claim 63, further comprising converting raw data from said sensors into a probabilistic assessment of at least one of health, activity and safety of the individual by means of at least one of algorithms, rules engines, decision making systems and workflow in said analyzing system.
- [c67] 67. The method according to claim 63, further comprising utilizing at least one of Artificial Intelligence, Case Based Reasoning, Evidential Reasoning, Data Mining,



Rule Base Decisioning and Fuzzy Logic, Agent Based Simulation, System Dynamic Simulation, Discrete Event Simulation and Monte Carlo Simulation in its reasoning within said analyzing system.

- [c68] 68. The method according to claim 63, further comprising utilizing data from at least two of said sensors for assessing the status of the individual and inferring the individual's at least one of quality of life, security, activity, health and status by means of said analyzing system.
- [c69] 69. The method according to claim 68, further comprising utilizing said assessment of status to probabilistically or deterministically determine if an activity is normal or an anomaly, and if said activity is normal as defined by a probability set-point, using said decision making and activation systems to label said activity as normal, but if said activity is an anomaly, using said decision making and activation systems to perform at least one of contacting the individual and sending assistance to the individual.
- [c70] 70. The method according to claim 63, further comprising integrating said method with at least one of a health and owner's insurance to at least one of reduce a cost of said insurance or enhanced care at a given level of said insurance, the owner being one of a home owner, an in-

stitution and an insurance company with or without reinsurance.

[c71] 71. The method according to claim 70, further comprising reducing premium for said level of insurance for extension of in-home living by means of said method.

[c72] 72. The method according to claim 63, wherein said method facilitates living in at least one of a home of the individual, a hospital, an assisted care facility and an institution.

[c73] 73. The method according to claim 63, further comprising providing a call center located at a remote location from said predetermined location for analyzing signals from said sensors and analytical results.

[c74] 74. The method according to claim 63, further comprising generating said output based upon said assessment of values, readings, trends, and pattern recognition from data related to at least one of power use, gas use, water use, video, motion, access, biometrics, HVAC, medicine dose, thermography, man/machine interfaces, computational platform and call centers by means of said decision making system.

[c75] 75. The method according to claim 63, wherein said sensors comprise at least one of automated voice, mo-

tion, touch and home physical system input/output sensors.

- [c76] 76. The method according to claim 63, further comprising generating at least one of a voice or electronically instantiated query, sound, optical, motion and a vibration signal to the individual upon the detection of an anomalous pattern of activity.
- [c77] 77. The method according to claim 63, wherein said generating is integrated in at least one of a medical device, a device with a processor, a TV, radio, telephone, user I/O device, appliance interlock and physical device interlock.
- [c78] 78. The method according to claim 63, wherein said processes being monitored or calibrated comprise at least one of having a remote location and an on site location.
- [c79] 79. The method according to claim 63, further comprising verifying said output by said decision making system for reducing the chance of a false decision.
- [c80] 80. The method according to claim 63, further comprising assessing of at least one of health, activity and safety of the individual based upon spatial inferencing by at least one of utilizing a dynamically configured spatial/volumetric simulation space, activity density, sequence

and rate, spatial rate variation and activity–resource reconciliation.

- [c81] 81. The method according to claim 63, wherein said method utilizes at least one of logical and reasoned rules for comparing a volumetric and temporal dynamic control volume for persons and activities of the individual.
- [c82] 82. The method according to claim 63, wherein said method utilizes a plurality of sensors for enabling reasoned inputs and validating reasoning results.
- [c83] 83. The method according to claim 63, wherein said decision making system utilizes at least one of RF and mobile tracking means for assessing the individual's quality of health or life in the context of care.
- [c84] 84. The method according to claim 63, wherein said method utilizes appliance and utility use or flows to reason on at least one of health, safety and status of at least one of the individual and the individual's environment.
- [c85] 85. The method according to claim 63, wherein said method utilizes Agent Based Modeling to reconcile at least one of time and space appropriateness in activity and status of at least one of the individual and the individual's environment.

- [c86] 86. The method according to claim 63, wherein said method utilizes mutually exclusive time and space continuums to at least one of reason and infer at least one of activity, health and quality of life of the individual.
- [c87] 87. The method according to claim 63, wherein said method utilizes a plurality of sensors for obtaining time and space logical inputs and outputs for inferring at least one of health, status and quality of life of the individual.
- [c88] 88. The method according to claim 63, wherein said method comprises at least one of automated and manual algorithm learning with training motions and activities to instantiate logic and data baselines.
- [c89] 89. The method according to claim 63, wherein said method comprises continuous learning from at least one of activity, sensed signals, reasoning and feedback for increasing reasoning accuracy.
- [c90] 90. The method according to claim 63, wherein said method comprises product offerings that lower at least one of insurance and reinsurance cost for a given service or risk level.
- [c91] 91. The method according to claim 63, wherein said method is utilized across a plurality of monitored per-

sons to enable and perform comparative assessments and reasoning.

- [c92] 92. The method according to claim 63, wherein said method comprises utilizing more global data in comparative algorithms to assess at least one of attributes and context, the comparative wellness and activity state of one who is monitored.
- [c93] 93. The method according to claim 63, wherein said method comprises locating items tagged by RF based upon an automated command to locate and display.
- [c94] 94. The method according to claim 63, wherein said method comprises checking activities against forecasted or scheduled activities in assessing at least one of fraud, compliance to contracted terms and conditions, an anomaly and an adequacy of care.